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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/033,427	12/27/2001	Olivier Theytaz	19414-06075	9279
758	7590	06/08/2006	EXAMINER	
FENWICK & WEST LLP SILICON VALLEY CENTER 801 CALIFORNIA STREET MOUNTAIN VIEW, CA 94041			SHAPIRO, LEONID	
			ART UNIT	PAPER NUMBER
			2629	

DATE MAILED: 06/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/033,427	Applicant(s) THEYTAZ ET AL.	
	Examiner Leonid Shapiro	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-17 and 25-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-17 and 25-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the newly introduced limitation of independent claims 1, 25, 27: "the light emitted by the light source enters the entrance surface and is refracted at a second angle at the entrance surface, passes through the lens, and is refracted at the exit surface at a third angle to illuminate the target surface" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

The newly introduced limitation of independent claims 1,25, 27: " the light emitted by the light source enters the entrance surface and is refracted at a **second angle** at the entrance surface, passes through the lens, and is refracted at the exit surface at a **third angle** to illuminate the target surface" is not disclosed in Specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 3-17, 25-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The newly introduced limitation of independent claims 1,25, 27: " the light emitted by the light source enters the entrance surface and is refracted at a **second angle** at the entrance surface, passes through the lens, and is refracted at the exit surface at a

third angle to illuminate the target surface” is not disclosed in Specification or shown in the Figures.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4-7,9-15, 25-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adan et al. (US Patent NO. 6,531,692; hereinafter referred to as Adan) in view of Kleinschmidt et al. (US Patent NO. 6,476,987 B1; hereinafter referred to as Kleinschmidt).

As to independent claim 1, Adan (figure 6) teaches a system for illuminating a target surface (optical mouse 42) that includes a light source (LED 104), positioned at a first angle relative to a circuit board, the first angle being non-perpendicular to the circuit board and an optical coupler (107) having an entrance surface (inlet end 142) and an exit surface (158), the light source emitting light through an opening (206), (outlet end 144).

Adan does not expressly teach that the optical coupler is a lens. However, according to Microsoft Bookshelf basics dictionary, a lens is “A ground or molded piece of glass, plastic, or other transparent material with opposite surfaces either or both of

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which are curved, by means of which light rays are refracted so that they converge or diverge to form an image".

Therefore, since the optical coupler (107) taught by Adan has two opposite surface for converge or diverge the light, it would be qualified as a lens that direct the light similar to the lens claimed in claim 1 , and would be obvious to a person of ordinary skill in the art at the time the invention was made to realize that such pad (107) is or can be a lens since it performs the same function of a lens, to appropriately directs the light to the target surface.

Adan does not disclose the light emitted by the light source enters the entrance surface and is refracted at a second angle at the entrance surface, passes through the lens, and is refracted at the exit surface at a third angle to illuminate the target surface.

Kleinschmidt teaches the light emitted by the light source enters the entrance surface and is refracted at a second angle at the entrance surface, passes through the prism, and is refracted at the exit surface at a third angle to illuminate the target surface (See Fig.2, items α , β , Col. 6, Lines 36-44).

It would be obvious to a person of ordinary skill in the art at the time the invention was made to incorporate teaching of Kleinschmidt into Adan system in order to optimize beam entrance and exit angles (See Col. 1, Lines 60-67 in the Kleinschmidt reference).

As to claim 4, the shape of the coupler (107) fairly reads on the limitations refraction and diffraction (because the two surfaces 142 and 144 are concave and convex).

As to claim 5, Adan teaches that the light source has an angle of about 20 degrees of the flat surface (same orientation of the circuit board), which is within the range of 10 degrees and 45 degrees (col. 13, lines 5-7).

As to claim 6, as can be seen in figure 6, the light from the LED (104) flows through the opening (206) of the circuit board (158).

As to claim 7, as can be seen in figure 6 and by considering the optical coupler (107) being pad of the light source; the light source protrudes through the circuit board (col. 12, lines 23-29).

As to claim 9, as can be seen in figure 5, the entrance surface of the coupler (107) has a curved surface for gathering the light emitted from the light source (104).

As to claim 10, as can be seen in figures 5-6, Adan shows the coupler (107) having aspherical shape.

As to claim 11, as can be seen in figure 6, Adan shows that the coupler (107) has curved surface for spreading light onto the target surface (106) (col. 11, lines 10-31).

As to claim 12, the shape of the coupler (107) in figures 5-6 is a toroidal shape.

As to claims 13-14, Adan teaches using the device in an optical mouse or trackball (col. 4, lines 14-22).

As to claim 15, as can be seen in figure 6*, Adan teaches that the light source is light emitting diode (104).

As to independent claim 25, the claim is method corresponding to the system of claim 1, and would be analyzed as previously discussed with respect to claim 1.

As to claim 26, Adan teaches that the light source has an angle of about 20 degrees of the flat surface (same orientation of the circuit board), which is within the range of 10 degrees and 45 degrees (col. 13, lines 5-7).

As to independent claim 27, Adan (figure 6) teaches a illumination system for illuminating a surface using an illumination system in a computer pointing device, the method comprising (optical mouse 42) that includes a light means, structured at a first angle relative to a printed circuit board, the first angle being non-perpendicular to the circuit board (LED 104), and a gathering means (coupler 107) for gathering the emitted light (col. 12, lines 16-34), and a directing means (opening 206) for directing the light directly onto the surface (106) (col. 11, lines 10-31).

Adan does not disclose a means for refracting the gathered light at the entrance surface at a second angle; a means for passing refracted light through the means for directing; and a means for refracting the passed light at the exit surface of the means for directing at a third angle to illuminate the target surface with light refracted from the exit surface.

Kleinschmidt teaches a means for refracting the gathered light at the entrance surface at a second angle; a means for passing refracted light through the means for directing; and a means for refracting the passed light at the exit surface of the means for directing at a third angle to illuminate the target surface with light refracted from the exit surface (See Fig.2, items α , β , Col. 6, Lines 36-44).

It would be obvious to a person of ordinary skill in the art at the time the invention was made to incorporate teaching of Kleinschmidt into Adan system in order to optimize beam entrance and exit angles (See Col. 1, Lines 60-67 in the Kleinschmidt reference).

As to claim 28, as can be seen in figure 6., Adan teaches that the light source is light emitting diode (104).

As to claim 29, Adan teaches that the light source has an angle of about 20 degrees of the flat surface (same orientation of the circuit board), which is within the range of 10 degrees and 45 degrees (col. 13, lines 5-7).

As to claim 30, as can be seen above with respect to claim 27, Adan teaches that the gathering means is a lens (coupler 107, which is discussed above to be equivalent to a lens) positioned to gather the light from the light emitting means (104).

As to claim 31, Adan teaches using the device in an optical mouse or trackball (col. 4, lines 14-22).

5. Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adan and Kleinschmidt in view of Smith (US patent NO. 6,476,970).

As to claim 3, as can be seen above, Adan and Kleinschmidt teach all the limitations of claim 3 except the citation of using a Fresnel lens.

However, Smith teaches illumination optics for an optical mouse that includes a Fresnel lens (figure 6). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Smith using

Fresnel lens to be incorporated to Adan's and Kleinschmidt's device so as to be able to provide a compact uniform illumination beam that does not have blind spot.

As to claim 8, the shapes of the lens provided by Smith in figures 8-9 are fairly read on the limitation wedge shape of claim 8. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Smith using wedge lens to be incorporated to Adan's and Kleinschmidt's device so as to be able to provide a compact uniform illumination beam that does not have blind spot.

3. Claims 16-17, are rejected under 35 U.S.C. 103(a) as being unpatentable over Adan and Kleinschmidt in view of Bidiville (US patent NO. 6,084,574).

As can be seen above, Adan and Kleinschmidt teach all the limitations of claims 16-17, except the citation of having the lens made from glass or optical plastic.

However, Bidiville (figure 12B) teaches an optical mouse that includes lens (1220), which is made from glass or optical plastic (col. 16, lines 34-43).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Bidiville having lens made from glass or optical plastic to be incorporated to Adan's and Kleinschmidt's device because such materials are known to be used in the manufacturing of lenses and known for its reliability and affordability.

Response to Arguments

6. Applicant's arguments with respect to claim 1, 3-17,25-31 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Telephone Inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 571-272-7683. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LS
05.25.06



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